Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

SEP 2 3 1994

94-LWB-053

MS. M. A. Selby, Environmental Engineer
Washington State Department of Ecology
1315 W. 4th Ave.
Kennewick, Washington 99336

Dear Ms. Selby:

GROUNDWATER MONITORING PLAN FOR THE PROPOSED STATE-APPROVED LAND DISPOSAL SITE (WHC-SD-C018H-004)

In the letter from M. A. Selby, Washington State Department of Ecology (Ecology), to J. D. Bauer, U. S. Department of Energy, Richland Operations Office (RL), same subject, dated March 31, 1994, you provided a review of the Groundwater Monitoring Plan for the proposed State-Approved Land Disposal Site (SALDS) (WHC-SD-C018H-PLN-004) to determine if the plan would meet the requirements for a state waste discharge permit groundwater monitoring system. In your comments, you requested additional information and clarification of certain parts of the plan. The requested information and clarifications are included as Attachment 1.

Your letter also proposes an extensive list of constituents to be analyzed in the groundwater. It is recognized that this list is intended as a screen of target constituents in groundwater and that once background data on these constituents are obtained, the number of constituents to be routinely monitored in groundwater will decrease. RL and Westinghouse Hanford Company (WHC), in conjunction with three offsite laboratories, have critically reviewed this list for the technical feasibility and rationale for analyzing all the proposed constituents. Attachment 2 presents those constituents, grouped by analytical method, which RL and WHC agree to analyze in the groundwater to determine background levels.

A separate list of constituents is presented in Attachment 3, which RL and WHC believe should be deleted from the groundwater monitoring list. A matrix of reasons for deleting a constituent is included in this list. RL and WHC request that these constituents be deleted from your list.

Your letter also proposes a monitoring schedule and requests timely access to groundwater data in order to support the permitting process. Eight sampling events in a year are proposed in order to measure any seasonal variations in the aquifer. However, data from past Resource Conservation and Recovery Act (RCRA) monitoring events indicate that seasonal changes caused by recharge have a negligible effect on the aquifer in the 200 West Area (Annual Report for RCRA Groundwater Monitoring Projects at Hanford Site Facilities for 1993 DOE/RL-93-88).

Recharge to the aquifer from precipitation is low and not observable because of the low annual rainfall at Hanford and the depth of the aquifer in the 200 West Area. Additionally, the disposal facility is located too far from the Columbia River to be affected by seasonal water-level fluctuations that result from changes in river flows. The dominant observed water-level change in this area is a predictable long-term decline because of a remnant groundwater mound associated with the former 216-U-10 Pond in the 200 West Area.

If the intent of eight sampling events is to assess the impacts to the aquifer chemistry from discharge at the SALDS, the discharged water is expected to move slowly through the vadose zone and aquifer. Aquifer tests have demonstrated low average groundwater velocities in the aquifer (Characterization Report, C018H Disposal Siting Evaluation, WHC-SD-C018H-RPT- 35461 001). In any case, four sampling events a year routinely performed in this area should be sufficient to monitor any seasonal variations of the water table or to assess changes to the aquifer chemistry at the SALDS.

If you have other comments or concerns regarding the groundwater monitoring plan, please contact M. J. Furman of my staff on (509) 376-7062.

Sincerely,

Jay Augustenborg for

June M. Hennig, Director
Waste Management Division

WMD:MJF

Attachments:
1. Comment Responses
2. Analytes and Methods
3. Constituents to be Deleted From Proposed Groundwater Monitoring List

cc w/attach:
D. L. Flyckt, WHC
R. Kayser, EPA-Headquarters
D. R. Sherwood, EPA-Region X
B. Burke, CTUIR
R. Jim, YIN
D. Powaukee, NPT

COMMENT RESPONSES

Comment: This plan states that all drilling, monitoring, etc., will be carried out in accordance with RCRA. Since this is a state waste discharge permit site, the governing regulations are Washington Administrative Code (WAC) 173-160, 173-162, 173-200, 173-216, and Revised Code of Washington (RCW) 90.44, 90.48, and 18.104. All drilling, monitoring, etc., must be consistent with the requirements of these regulations. In cases where the RCRA requirements are more stringent, or cover areas that are not covered by these regulations, the state supports the use of the RCRA requirements. However, in case of a conflict, the state regulations listed above would have precedence.

Response: The groundwater monitoring plan is currently under revision. The revised plan will indicate that the state regulatory requirements for the drilling, construction, and sampling of monitoring wells at the proposed State-Approved Land Disposal Site have precedence over RCRA requirements.

Comment: Table 5, page 45, of this document appears to be complete. However, the heading states that it is two sheets, but only one sheet is provided. Please inform me if information is missing.

Response: Table 5 does not include two sheets. The reference to the second sheet is a typographical error and will be removed in the next revision.

Table 1. VOLATILE ORGANIC CONSTITUENTS AND ANALYSIS

CAS #	CONSTITUENT	SW-846 8240/8260** "APPENDIX IX"	= PQL (ug/L)
67-64-1	Acetone	X	100
107-13-1	Acrylonitrile	X	100
71-43-2	Benzene	X	5
75-27-4	Bromodichloromethane	X	5
75-25-2	Bromoform; Tribromomethane	X	5
56-23-5	Carbon tetrachloride	X	5
108-90-7	Chlorobenzene	X	5
67-66-3	Chloroform	X	5
124-48-1	Dibromochlorormethane; Chlorodibromomethane	X	5
106-93-4	1,2-Dibromoethane; Ethylene dibromide	X	5
107-06-2	1,2-Dichloroethane; Ethylene dichloride	X	5
75-34-3	1,1-Dichloroethane	X	5
75-35-4	1,1-Dichloroethylene; Vinylidene chloride	X	5
158-60-5	trans-1,2-Dichloroethylene	X	5
78-87-5	1,2-Dichloropropane	X	5
10061-01-5	cis-1,3-Dichloropropene	X	5
10061-02-6	trans-1,3-Dichloropropene	X	5
100-41-4	Ethylbenzene	X	5
591-78-6	2-Hexanone; Methyl n-butyl ketone	X	50
78-83-1	Isobutyl Alcohol	X*	100
108-10-1	4-Methyl-2-pentanone; Methyl isobutyl ketone	X	50
74-87-3	Methyl chloride; Chloromethane	X	10
78-93-3	Methyl ethyl ketone (MEK); 2-Butanone	X	100
75-09-2	Methylene chloride; Dichloromethane	X	5
110-86-1	Pyridine	X	5
100-42-5	Styrene	X	5
127-18-4	Tetrachloroethylene; Perchloroethylene; Tetrachloroethene	X	5
108-88-3	Toluene	X	5
71-55-6	1,1,1-Trichloroethane; Methylchloroform	X	5
79-00-5	1,1,2-Trichloroethane	X	5
79-01-6	Trichloroethylene; Trichloroethene	X	5
75-01-4	Vinyl chloride	X	10
1330-20-7	Xylene (total)	X	5

*APPENDIX IX suggests analysis by method 8015
**TICs will be reported

Table 2. SEMIVOLATILE ORGANIC CONSTITUENTS AND ANALYSIS

CAS #	CONSTITUENT	SW-846 8270** "APPENDIX IX"	PQL (ug/L)
98-86-2	Acetophenone	X	10
62-53-3	Aniline	X	10
140-57-8	Aramite	X	20
50-32-8	Benzo[a]pyrene	X	10
100-51-6	Benzyl alcohol	X	20
111-44-4	Bis(2-chloroethyl) ether	X	10
117-81-7	Bis(2-ethylhexyl) phthalate	X	10
95-57-8	2-Chlorophenol	X	10
108-39-4	m-Cresol	X	10
95-48-7	o-Cresol; 2-Methylphenol	X	10
106-44-5	p-Cresol; 4-Methylphenol	X	10
84-74-2	Di-n-butyl phthalate	X	10
117-84-0	Di-n-octyl phthalate	X	10
2303-16-4	Diallate	X	10
106-46-7	p-Dichlorobenzene	X	10
91-94-1	3,3'-Dichlorobenzidine	X	20
84-66-2	Diethyl phthalate	X	10
131-11-3	Dimethyl phthalate	X	10
119-93-7	3,3'-Dimethylbenzidine	X	10
121-14-2	2,4-Dinitrotoluene	X	10
606-20-2	2,6-Dinitrotoluene	X	10
118-74-1	Hexachlorobenzene	X	10
67-72-1	Hexachloroethane	X	10
78-59-1	Isophorone	X	10
72-43-5	Methoxychlor	X	10
91-20-3	Naphthalene	X	10
130-15-4	1,4-Naphthoquinone	X	10
134-32-7	1-Naphthylamine	X	10
91-59-8	2-Naphthylamine	X	10
98-95-3	Nitrobenzene	X	10
924-16-3	N-Nitroso-di-n-butylamine	X	10
55-18-5	N-Nitrosodiethylamine	X	10
62-75-9	N-Nitrosodimethylamine; Dimethylnitrosamine	X	10
86-30-6	N-Nitrosodiphenylamine	X	10
10595-95-6	N-Nitroso-N-methylethylamine	X	20
87-86-5	Pentachlorophenol	X	50
108-95-2	Phenol	X	10
106-50-3	o-Phenylenediamine	X	10
110-86-1	Pyridine	X	10
126-73-8	Tributyl Phosphate*		NA
88-06-2	2,4,6-Trichlorophenol	X	10

*Must be specifically requested on analysis request forms
**TICs will be reported

Table 3. ORGANOCHLORINE PESTICIDES/PCBs AND ANALYSES

CAS #	CONSTITUENT	SW-846 8080 "APPENDIX IX"	PQL (ug/L)
319-84-6	alpha-BHC	X	2
319-86-8	delta-BHC	X	2
58-89-9	gamma-BHC; Lindane	X	2
57-74-9	Chlordane	X	50
72-54-8	4,4'-DDD	X	50
72-55-9	4,4'-DDE	X	10
50-29-3	4,4'-DDT	X	2
959-98-8	Endosulfan I	X	2
33213-65-9	Endosulfan II	X	10
1031-07-8	Endosulfan sulfate	X	10
72-20-8	Endrin	X	10
7421-93-4	Endrin aldehyde	X	2
72-43-5	Methoxychlor	X	2
8001-35-2	Toxaphene	X	50
12674-11-2	Aroclor 1016	X	50
11104-28-2	Aroclor 1221	X	50
11141-16-5	Aroclor 1232	X	50
53469-21-9	Aroclor 1242	X	50
12672-29-6	Aroclor 1248	X	50
11097-69-1	Aroclor 1254	X	50
11096-82-5	Aroclor 1260	X	50

Table 4. CHLORINATED HERBICIDES AND ANALYSES

CAS #	CONSTITUENT	SW-846 8150	PQL (ug/L)
94-75-7	2,4-D; 2,4-Dichlorophenoxyacetic acid	X	12
93-72-1	Silvex; 2,4,5-TP	X	2

Table 5. "SUPER" SW-846 8015 (direct aqueous injection)

CAS #	CONSTITUENT	PQL (mg/l)
123-91-1	1,4 Dioxane	150
60-29-7	Diethyl ether	50
141-78-6	Ethyl acetate	50
78-83-1	Isobutyl Alcohol	50
78-93-3	Methyl Ethyl Ketone (MEK); 2-Butanone*	100
64-17-5	Ethanol; Ethyl Alcohol	5000
71-36-3	n-Butyl Alcohol; 1-Butanol	50
107-21-1	Ethylene Glycol	100
*Analysis available with higher PQL via SW-846 8240/8260		

Table 6. METAL CONSTITUENTS AND ANALYSES

CONSTITUENT	SW-846	PQL
INDUCTIVELY COUPLED PLASMA (ICP) ATOMIC EMISSION SPECTROMETRY		
ICP - Method Ref.	6010	(ug/L)
Aluminum	Al	500*
Antimony	Sb	300
Barium	Ba	20
Beryllium	Be	10
Boron	B	100*
Cadmium	Cd	40
Calcium	Ca	500*
Chromium	Cr	70
Cobalt	Co	70
Copper	Cu	60
Iron	Fe	100*
Lithium	Li	100*
Magnesium	Mg	1000*
Manganese	Mn	10*
Molybdenum	Mo	100*
Nickel	Ni	75
Potassium	K	5000*
Silicon	Si	450*
Silver	Ag	70
Sodium	Na	1000*
Vanadium	V	80
Zinc	Zn	20
Zirconium	Zr	100*
*No PQL values suggested in 40 CFR 264 (Appendix IX). Values are estimated		
COLD VAPOR ATOMIC ABSORPTION		
Mercury	7470/7471	2
GRAPHITE FURNACE ATOMIC ABSORPTION		
Arsenic	7060	10
Lead	7421	10
Selenium	7740	20
FLAME ATOMIC ABSORPTION		
Tin	7870	8000

Table 7. INORGANIC CONSTITUENTS AND ANALYSES

CONSTITUENT	Method Number	Method Source	PQL (ug/L)
pH	150.1	40 CFR 136	0.1 pH units
TDS	160.1	40 CFR 136	10,000
TSS	160.2	40 CFR 136	4000
Anions by IC*	300.0	EPA Method	500 per anion
Bromide	300.0 (Anion by IC)	EPA Method	500
Chloride	300.0 (Anion by IC)	EPA Method	500
Cyanide	335.(1)/2/3	40 CFR 136	10
Fluoride	300.0 (Anion by IC)	EPA Method	500
Ammonia	350.1/2/3	40 CFR 136	50
Nitrate	300.0 (Anion by IC)	EPA Method	500
Nitrate/Nitrite	353.1/2/3	EPA Method	50
Phosphorous as PO_4	300.0 (Anion by IC)	EPA Method	500
Sulfate	300.0 (Anion by IC)	EPA Method	500
Sulfide	9030	SW-846	1000
Temperature		Field Analysis	NA
Total Organic Halides	9020	SW-846	50

*Anions include: F, Br, SO_4, PO_4, NO_2, NO_3, Cl

Table 8. RADIONUCLIDES AND ANALYSES

RADIONUCLIDE		CDL (pCi/L)
Gross beta	LAB SPECIFIC	3
Gross alpha	LAB SPECIFIC	4
Gamma Energy Analysis Cesium-137 Europium-152,154,155 Ruthenium-106 Report all positive peaks	LAB SPECIFIC	 15 50, 50, 50
Iodine-129	LAB SPECIFIC	5
Radium-226	LAB SPECIFIC	2
Radium-228	LAB SPECIFIC	3
Strontium-90	LAB SPECIFIC	2
Tritium	LAB SPECIFIC	400
Plutonium-239/240	LAB SPECIFIC	1
Uranium (gross)	LAB SPECIFIC	0.1 ppb

NOTES:

PQL - Practical Quantitation Limit per 40 CFR 264, Appendix IX. NOTE: these limits are the lowest concentrations that can be reliably determined within specified limits of precision and accuracy by the indicated methods under routine laboratory operating conditions. The PQL values in many cases are based on a general estimate for the method and not on a determination for individual compounds.

CDL - Contract Detection Limit
IC - Ion Chromatography
TIC - Tentatively Identified Compound
ug/L - microgram per liter
mg/L - milligrams per liter
pCi/L - pico curies per liter
NA - Not applicable

CONSTITUENTS TO BE DELETED FROM PROPOSED GROUNDWATER MONITORING LIST

DELETION MATRIX	
	Current Analytical Capability
1a	No method (SW-846 or 40 CFR 136)
1b	No contract laboratory method
1c	High analytical costs/low probability of occurrence
	Not in Process Condensate
2a	Not reported in 242-A Evaporator Process Condensate Stream Specific Report (SSR) data
2b	Maximum SSR result undetectable after ETF treatment: 10 % of highest observed detection < 10 ppb (organics), 1 % of highest observed detection < 20 ppb (metals), or 1 % of highest observed detection < 100 ppb (anions).
3a	Sampling Contaminant
3b	Analytical Contaminant
	Not in Feed to the 242-A Evaporator (from Inventory Report)
4a	Not used in any facility at Hanford
4b	Only used in one facility at Hanford
	Not Expected in Treated Effluent
5a	Neutralized in ETF feed
5b	Destroyed in ETF feed by oxidation/reduction
5c	Volatilized through peroxide decomposition in the ETF
5d	Degraded by peroxide, removed by RO process in ETF
5e	Undocumented "Tentatively Identified Compound"
5f	Degradation product. No present precursor
5g	Chlorinated herbicide not added to DSTs
5h	Dye intermediate; not expected at Hanford
5i	Not relative to waste or treatment process
6	Not Expected in Groundwater
7a	Reported as Other Specified Constituents
7b	Reported as Individual Radioactive Isotope
8	Not Compound Specific
9	Parameter a Function of Local Hydrogeology

NOTE: A more detailed explanation of this matrix is appended to the end of these lists.

CAS #	CONSTITUENT	REASON FOR DELETION
	VOLATILE AND SEMI-VOLATILE ORGANIC CONSTITUENTS	
100-52-7	Benzaldehyde	1a, 1b, 2b, 4a, 6
106-51-4	Benzoquinone, para-	1a, 2a, 4a, 5f, 6
100-44-7	Benzyl chloride	1a, 2a, 4a, 6
123-73-8	Butyraldehyde	1a, 1b, 2a, 4a, 6
142-62-1	Caproic acid	1a, 1b, 2a, 4a, 6
75-87-6	Chloral; Acetaldehyde, trichloro-	1a, 1b, 2a, 4a, 5f, 5g, 6
95-79-4	Chloro-2-methyl aniline; 4-(para-chloro-ortho-toluidine)	1a, 1b, 2a, 4a, 6
	Cresylic Acid	2a, 6, 7a (analyzed as cresols)
540-97-6	Cyclohexasiloxane, dodecamethyl-	1a, 1b, 2a, 3b, 5e, 6
	Cyclohexasiloxane, decamethyl-	1a, 1b, 2a, 3b, 4a, 5e, 6
	Cyclotetrasiloxane, hexamethyl-	1a, 1b, 2a, 3b, 5e, 6
556-67-2	Cyclotetrasiloxane, octamethyl-	1a, 1b, 2a, 3b, 5e, 6
	Decane	1a, 2a, 4a, 6
	Diburyl-3-hydroxyburyl phosphate	1a, 1b, 2a, 4a, 5e, 6
107-66-4	Diburyl phosphate	1a, 1b, 2b, 3a, 6
62-73-7	Dichlorvos	2a, 4a, 5g, 6
119-90-4	3,3'-Dimethoxybenzidine	1a, 2a, 4a, 5h, 6
540-73-8	1,2-Dimethyl hydrazine	1a, 1b, 2a, 4a, 5b, 6
3440-02-6	Dimethyldiphenoxy-silane	1a, 1b, 2a, 4a, 5e, 6
591-22-0	3,5-Dimethylpyridine	1a, 1b, 2b, 4a, 6
122-66-4	1,2-Diphenyl hydrazine	1a, 2a, 4a, 5b, 6
112-40-3	Dodecane	1a, 2b, 6
50-00-0	Formaldehyde	1a, 3a, 6
	Heptadecane	1a, 1b, 2b, 4a, 6
	Hexadecane	1a, 2b, 4a, 6
4161-60-8	4-Hydroxy-2-pentanone	1a, 1b, 2a, 4a, 5e, 6
123-42-2	4-Hydroxy-4-methyl-2-pentanone	1a, 1b, 2a, 4a, 5e, 6
148-24-3	Hydroxyquinoline	1a, 1b, 2a, 3a, 6
67-56-1	Methanol	1b, 2a, 3b
101-66-1	4,4-Methyl bis(N-N'-dimethyl) analine	1a, 1b, 4a, 6
	2-Methylnonane	1a, 1b, 2b, 4a, 6
107-87-9	Methyl n-propyl ketone; 2-Pentanone	1a, 1b, 2b, 4a, 6
2385-85-5	Mirex	1a, 2a, 4a, 6
	N,N-phenylethylene methanamine	1a, 1b, 2a, 4a, 5e
	Pentadecane	1a, 1b, 2b, 6
108-46-3	Resorcinol	1a, 2a, 4a, 5f, 6
	Siloxane isomer - unknown	1a, 1b, 2a, 3b, 5e, 6, 8
558-13-4	Tetrabromomethane	1a, 1b, 2a, 6
	Tetradecane	1a, 6
109-99-9	Tetrahydrofuran	1a, 1b, 4a, 6
	Tetrahydro-2-furanethane; 2-Ethyl tetrahydrofuran	1a, 1b, 2a, 4a, 6

CAS #	CONSTITUENT	REASON FOR DELETION
95-80-7	2,4-Toluenediamine	1a, 1b, 2a, 4a, 6
2233-00-3	3,3,3-Trichloro-1-propylene	1a, 1b, 2a, 4a, 5e, 6
629-50-5	Tridecane	1a, 1b, 2a, 6
112-49-2	Triglyme	1a, 1b, 2b, 4a, 6
512-56-1	Trimethyl phosphate	1a, 2a, 4a, 6
57-13-6	Urea	1a, 1b, 4b, 6
	ALCOHOLS AND GLYCOLS	
112-34-5	Butoxydiglycol	1a, 1b, 2b, 4a, 6
111-76-2	2-Butoxyethanol	1a, 1b, 4b, 6
54446-78-5	Butoxyglycol	1a, 1b, 4a, 6
143-22-6	Butoxytriethyleneglycol	1a, 1b, 2b, 4a, 6
112-50-5	Ethoxytriethyleneglycol	1a, 1b, 4a, 5e, 6
111-77-3	Methoxydiglycol	1a, 1b, 2b, 4a, 6
112-35-6	Methoxytriglycol	1a, 1b, 2a, 4a, 6
67-63-0	2-Propanol	1a, 1b, 2b, 6
	METALS	
7440-45-1	Cerium	1a, 1b, 6, 7b
7440-46-2	Cesium	1a, 1b, 6, 7b
7440-24-6	Strontium	1a, 1b, 2b, 4b, 7b
	INORGANIC CONSTITUENTS	
7553-56-2	Iodine	1a, 1b, 5c
	Dissolved oxygen	1a, 1b, 9
	Bicarbonate	1a, 1b, 5a, 9
	Kjeldahl Nitrogen	7a, 8
	Total organic carbon	7a, 8
	Carbonate	1a, 1b, 4a, 5a, 9
	Silicate	2a, 7a, 9
	RADIOACTIVE CONSTITUENTS	
	Radium (226 + 228)	7b (Reported as Ra226 + Ra228)

CAS #	CONSTITUENT	REASON FOR DELETION
	MISCELLANEOUS CONSTITUENTS	
64-18-6	Formic acid	1a, 1b, 4a, 5a, 6
302-01-2	Hydrazine	1a, 1b, 2a, 5a, 5b, 6
64-19-7	Acetic acid	1a, 1b, 4b, 5a, 5e, 6
7601-90-3	Perchloric acid	1a, 1b, 5a, 5b, 6
463-56-9	Thiocyanate	1a, 1b, 4b,
	Thiosulfate	1a, 1b, 4a
	Color	9
	Fecal coliform	1a, 1b, 5d, 6, 9
	Total coliform	1a, 1b, 3a, 5d, 9
	BOD	5i, 9
	COD	5i, 9
	Hydrocarbon - unknown	1a, 1b, 2a, 5e, 6, 7a, 8
1746-01-6	2,3,7,8 Tetrachlorodibenzo-p-dioxin	4a, 6

EXPLANATION OF MATRIX

1a - Includes those constituents for which there are no methods available under SW-846 or 40 CFR 136.

1b - These constituents are not included in the current WHC analytical contracts with 3 off-site laboratories.

1c - Analysis for these constituents is available. The cost in developing or performing these methods, however, is not justified against the probability that these constituents occur in the waste stream. For example, an expensive method such as that for dioxin would not be justified, in that dioxins were never used or produced Hanford.

2a - No evidence exists from past RCRA sampling and analysis that these constituents can be detected in the process condensate.

2b - These constituents should be undetectable in the ETF effluent based on plant design specifications of 90% destruction of organic compounds and 99% removal of inorganic constituents.

3a, 3b - These constituents are common contaminants found in either the sampling or the analytical process. For example, the columns used in gas chromatography for organic analyses use siloxanes as the stationary liquid phase. These constituents, therefore, are commonly detected as column bleed.

4a - Constituents that were never used at Hanford are included in this category.

4b - If a constituent were used at only one facility at Hanford, it was included in this category.

5 - This category in general pertains to those constituents that are not expected to occur in the treated effluent.
5a - These constituents tend to be unstable and would be readily neutralized in the process condensate. For example, hydrazine would tend to protonate in the process condensate to hyrozinium ion.
5b - These constituents tend to be unstable and would be readily decompose in the process condensate. For example, perchloric acid would decompose to produce chloride ion and oxygen.
5c - This category was only used for iodine which would volatilize in the presence of peroxide during the UV/OX treatment in the ETF.
5d - These parameters measure biological activity. Treatment of waste by oxidation and filtration will preclude biological activity such as fecal coliform.
5e - No laboratory data are available to confirm the presence of these species in the process condensate.
5f - These constituents were proposed because they are suspected degradation products in the treatment of the surrogate wastes (from pilot plant testing). However, the precursors to such constituents are not present in the actual waste feed.
5g - This category includes those chlorinated herbicides that would not be part of the waste feed in that they were never added to the double-shell tanks.
5h - These constituents are specific to the dye industry and are not expected at Hanford. They are found as dye intermediates.
5i - Parameters such as Biological Oxygen Demand (BOD) that determine the effects of discharging effluents to open waters are not relative to the ETF disposal method (eg: disposal to the soil column).

6 - Because SALDS is located in an uncontaminated area, these constituents are not expected in the groundwater in the vicinity of the SALDS.

7a, 7b - Specific compounds, constituents, or isotopes are reported when no specific constituent is requested.

8 - Specific compounds, constituents, or isotopes are reported when no specific constituent is requested.

9 - Local hydrology and geology will control these parameters. Bicarbonate and carbonate equilibrium in the groundwater, for example, will be controlled by the local hyrogeology.

CORRESPONDENCE DISTRIBUTION COVERSHEET

Author	Addressee	Correspondence No.
J. M. Hennig, RL (N. A. Ballantyne, WHC)	M. E. Selby - Ecology	Incoming 9405771 XRef: 9455568D

Subject: GROUNDWATER MONITORING PLAN FOR THE PROPOSED STATE-APPROVED LAND DISPOSAL SITE (WHC-SD-C018H-PLN-004)

INTERNAL DISTRIBUTION

Approval	Date	Name	Location	w/att
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